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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,660	02/06/2004	Sai Yiu Ho	030351	7521

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QUALCOMM INCORPORATED
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EXAMINER

CHO, UN C

ART UNIT	PAPER NUMBER
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2617

NOTIFICATION DATE	DELIVERY MODE
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03/23/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/773,660	Applicant(s) HO ET AL.	
	Examiner UN C. CHO	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17-20, 35-50, 52-56 and 58-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17-20, 35-45, 52, 55, 56, 58, 61 and 62 is/are rejected.
- 7) ☒ Claim(s) 14, 15, 46-50, 53, 54, 59 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/15/2011</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments with respect to claims 1 – 13, 17 – 20, 35 – 45, 52, 55, 56, 58, 61 and 62 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 62 is rejected under 35 U.S.C. 101 because giving its broadest and reasonable interpretation of a claim drawn to a computer-readable storage medium typically covers form of non-transitory tangible media and transitory propagating signal *per se*.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 3, 5 – 8, 12, 13, 35 – 39, 41, 43 – 44, 52, 58 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parantainen (US 7,447,287 B1) in view of Behtash et al. (US 5,745,480).

Regarding claim 1, Parantainen teaches a transceiver subsystem (BS; Fig. 1, element 102); and a processing subsystem (PCU; Fig. 1, element 103) configured to receive a request (QoS request) for grant including an identification of a specific service class from a mobile station (the PCU 103 receives a request from the MS through the BS 102, wherein the QoS request includes QoS parameters) (Col. 4, lines 24 – 30 and Col. 5, lines 1 – 7), the specific service class (QoS parameter) being one of a set of available-service classes (QoS parameters being one of real-time and non-real time applications), each service class corresponding to a particular type of data (real-time speech and/or real-time video image, fall into the real-time category; e-mail and SMS fall into the non-real time application category) to be transmitted by the mobile station (the QoS request including the QoS parameter is transmitted by the MS 101; Col. 4, lines 24 – 30).

However, Parantainen does not specifically disclose to make a determination whether or not to issue a grant to the mobile station in response to the request for grant to send a grant for the specific service class to the mobile station if a determination is made at the *base station* to issue the grant, and to receive data for the specific service class transmitted according to the grant on a reverse link from the mobile station to the base station, wherein the base station is a service base station. In an analogous art, Behtash teaches to make a determination whether or not to issue a grant to the mobile station (user terminal; Fig. 1, elements 104 – 106) in response to the request for grant (user terminal transmits a connection request message) to send a grant for the specific service class to the mobile station if a determination is made at the base station (base

Art Unit: 2617

station; Fig. 1, element 102) to issue the grant (the base station receives the connection request message, that specifies bit rate and a particular QoS parameter, from the user terminal and the base station 102 responds with a connection response message granting the request), and to receive data for the specific service class transmitted according to the grant on a reverse link from the mobile station to the base station, wherein the base station is a serving base station (the user terminal accepts the connection by transmitting a connection accept message and communicates with the base station for the specific service class as indicated in the connection request message sent by the user terminal) (Col. 5, lines 57 – 33). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Behtash to the system of Parantainen in order to provide a flexible multi-rate wireless communications system that supports a plurality of distributed user terminals in full-duplex simultaneous communications with a central base station.

Regarding claim 2, Parantainen teaches wherein the processing subsystem (PCU 103) is configured to make the determination independently of a base station controller (BSC 104) (See Fig. 1).

Regarding claim 3, Parantainen teaches wherein the processing subsystem (PCU 103) is configured to make the determination independently of one or more additional base stations (BS 102) (QoS request handling is done at the PCU 103 and not at the BS 102) (See Fig. 1).

Regarding claim 5, Parantainen teaches wherein if the processing subsystem (PCU 103) determines that the grant should be issued to the mobile station 101, the base station 102 is configured to issue the grant (the PCU signals the allocation by paging the MS through the BS; Col. 7, lines 13 – 25).

Regarding claim 6, Parantainen teaches wherein the processing subsystem 103 is configured to identify the mobile station in the grant (the PCU signals the allocation by paging the MS through the BS, wherein the paging signal inherently contains the recipient identification information) (Col. 7, lines 13 – 25).

Regarding claim 7, Parantainen teaches wherein the processing subsystem 103 is configured to issue the grant as an individual grant (paging signal is directed to MS 101) (Col. 7, lines 13 – 25).

Regarding claim 8, Parantainen teaches wherein the processing subsystem is configured to identify the mobile station in the individual grant (paging signal inherently identifies the recipient) (Col. 7, lines 13 – 25).

Regarding claim 12, the combination of Parantainen and Behtash teaches all the limitations including a mobile station having a transceiver subsystem (radio TX/RX 402) and a processing subsystem (control 405) to generate and transmit QoS request including QoS parameters and receiving a paging signal from the PSU indicating to the MS through the BS that the request has been allocated (Col. 6, lines 21 – 54).

Regarding claim 13, Parantainen teaches that the QoS request includes QoS parameters (Col. 4, lines 24 – 30 and Col. 5, lines 1 – 7).

Regarding claims 35, 58 and 62, the claims are interpreted and rejected for the same reason as set forth in claim 1.

Regarding claim 36, the claim is interpreted and rejected for the same reason as set forth in claim 5.

Regarding claim 37, the claim is interpreted and rejected for the same reason as set forth in claim 7.

Regarding claim 38, the claim is interpreted and rejected for the same reason as set forth in claim 6.

Regarding claims 39 and 41, the claims are interpreted and rejected for the same reason as set forth in claim 8.

Regarding claim 43, the claim is interpreted and rejected for the same reason as set forth in claim 2.

Regarding claim 44, the claim is interpreted and rejected for the same reason as set forth in claim 3.

Regarding claim 52, the claim is interpreted and rejected for the same reason as set forth in claim 12.

5. Claims 4 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Parantainen and Behtash as applied above, and further in view of Ruutu et al. (US 2003/0123392 A1).

Regarding claim 4, the combination of Parantainen and Behtash do not specifically teach wherein the determination is made at a MAC layer. In an analogous

Art Unit: 2617

art, Ruutu teaches wherein the determination is made at a MAC layer (MAC layer QoS scheduling function; Page 3, Paragraph 0039). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Ruutu to the modified system of Parantainen and Behtash in order to provide a method and network node for controlling packet flow in data networks and optimizing network throughput.

Regarding claim 45, the claim is interpreted and rejected for the same reason as set forth in claim 4.

6. Claims 9 – 11, 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Parantainen and Behtash as applied above and further in view of Gopalakrishnan et al. (US 6,836,666 B2).

Regarding claim 9, the combination of Parantainen and Behtash do not specifically disclose issuing the grant as a common grant. In an analogous art, Gopalakrishnan teaches that the scheduling algorithm chooses one or more users at a time and grants them permission to transmit on the uplink (Col. 7, lines 15 – 19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Gopalakrishnan to the modified system of Parantainen and Behtash in order to efficiently utilize the uplink channel while striking a balance between minimizing aggregate channel interference and improving user level quality of service.

Regarding claim 10, the combination of Parantainen, Behtash and Gopalakrishnan disclose wherein the processing subsystem is configured to identify in the common grant (scheduling grants to one or more users) the specific service class (QoS parameter) for which the common grant is issued (Parantainen: Col. 6, lines 21 – 54 and Gopalakrishnan: Col. 7, lines 15 – 19).

Regarding claim 11, the combination of Parantainen, Behtash and Gopalakrishnan disclose wherein the processing subsystem is configured to issue at least one individual grant (paging signal directed to MS 101; Parantainen: Col. 7, lines 13 – 25) and at least one common grant (scheduling grants to one or more users; Gopalakrishnan: Col. 7, lines 15 – 19).

Regarding claim 40, the claim is interpreted and rejected for the same reason as set forth in claim 9.

Regarding claim 42, the claim is interpreted and rejected for the same reason as set forth in claim 11.

7. Claims 17 – 20, 49, 50, 55, 56 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Parantainen, Behtash as applied above and further in view of Kadaba et al. (US 7,158,504 B2).

Regarding claim 17, the combination of Parantainen and Behtash do not specifically disclose wherein the processing subsystem is configured to identify a maximum supportable traffic-to-pilot ratio in the request. In an analogous art, Kadaba teaches wherein the processing subsystem is configured to identify a maximum

Art Unit: 2617

supportable traffic-to-pilot ratio in the request (R-PRCH reports the wireless unit pilot strength to the base station to enable the base station to calculate the instantaneous path loss to the wireless unit (and hence the ability of the mobile to support different data rates), thus it is possible to identify a maximum supportable traffic-to-pilot ratio; Col. 5, lines 29 – 51). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Kadaba to the modified system of Parantainen and Behtash in order to provide greater flexibility in scheduling wireless unit transmission.

Regarding claim 18, Kadaba teaches wherein the processing subsystem is configured to generate feedback while transmitting under the grant, wherein the feedback indicates changes in the maximum supportable traffic-to-pilot ratio (wireless unit and BS negotiate a maximum data rate for autonomous transmission; Col. 13, lines 20 – 42).

Regarding claim 19, Kadaba teaches wherein the processing subsystem is configured to generate one or more additional requests for transmission to the base station if no grant is received in response to a previous request for transmission (waiting period indication option; Col. 10, line 27 through Col. 11, line 12).

Regarding claim 20, Kadaba teaches wherein if no grant is received from the base station in response to the request for transmission, the processing subsystem is configured to autonomously transmit data to the base station (the wireless unit sends R-RUCH with zero buffer size (autonomously); Col. 11, lines 13 – 23).

Regarding claims 49, 55 and 61, the claims are interpreted and rejected for the same reason as set forth in claim 17.

Regarding claims 50 and 56, the claims are interpreted and rejected for the same reason as set forth in claim 18.

Allowable Subject Matter

8. The following is a statement of reasons for the indication of allowable subject matter:

Please refer to the previous office action mailed on 11/27/2009 for the statement of reasons for the indication of allowable subject matter for claims 14, 15, 46 – 50, 53, 54, 59 and 60.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2617

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to UN C. CHO whose telephone number is (571)272-7919. The examiner can normally be reached on 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/UN C. CHO/
Primary Examiner, Art Unit 2617